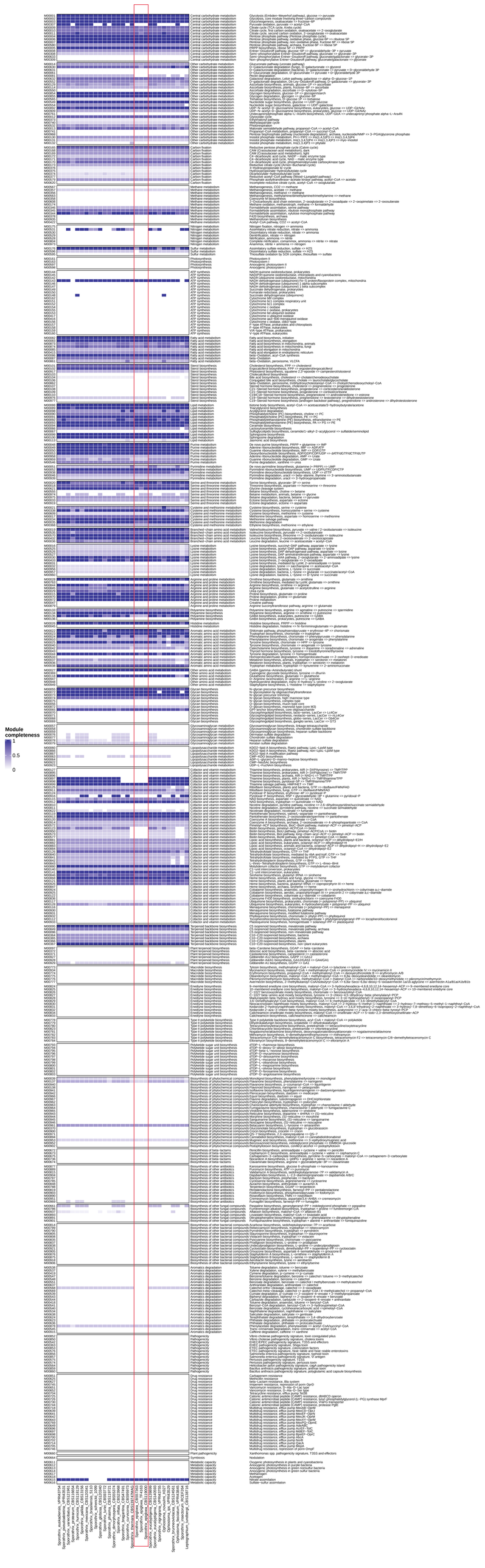
Module completeness
1
0.5
0
M00001 Central carbohydrate metabolism Glycolysis (Embden-Meyerhof pathway), glucose <= pyruvate
M00002 Central carbohydrate metabolism Glycolysis, core module involving three-carbon compounds
M00003 Central carbohydrate metabolism Gluconeogenesis, oxaloacetate => glucose-6P
M00307 Central carbohydrate metabolism Pyruvate oxidation, pyruvate => acetyl-CoA
M00009 Central carbohydrate metabolism Citrate cycle (TCA cycle, Krebs cycle)
M00010 Central carbohydrate metabolism Citrate cycle, first carbon oxidation, 2-oxoglutarate => oxaloacetate
M00011 Central carbohydrate metabolism Citrate cycle, second carbon oxidation, 2-oxoglutarate => oxaloacetate
M00004 Central carbohydrate metabolism Pentose phosphate pathway (Pentose phosphate cycle)
M00308 Central carbohydrate metabolism Semi-phosphorylative Entner-Doudoroff pathway, gluconate => 2-oxo-3-deoxy-6-P
M00309 Central carbohydrate metabolism Semi-phosphorylative Entner-Doudoroff pathway, fructose-6P => ribose-5P
M00080 Central carbohydrate metabolism Pentose phosphate pathway, archaea, fructose-6P => ribose-5P
M00005 Central carbohydrate metabolism PRPP biosynthesis, ribose-5P => PRPP
M00006 Central carbohydrate metabolism Entner-Doudoroff pathway, glucose-6P => glyceraldehyde-3P + pyruvate
M00308 Central carbohydrate metabolism Semi-phosphorylative Entner-Doudoroff pathway, gluconate => glycerate-3P
M00309 Central carbohydrate metabolism Semi-phosphorylative Entner-Doudoroff pathway, 2-dehydro-3-deoxygluconate => glycerate-3P
M00033 Central carbohydrate metabolism Non-phosphorylative Entner-Doudoroff pathway, gluconate/galactonate => glycerate
M00014 Other carbohydrate metabolism Galactose degradation (Leloir pathway), galactose => glucose-6P
M00632 Other carbohydrate metabolism D-Galactonate degradation (fungi), D-galactonate => pyruvate
M00631 Other carbohydrate metabolism D-Galactonate degradation (bacteria), D-galactonate => D-glyceraldehyde-3P
M00630 Other carbohydrate metabolism D-Galactarate degradation, D-galactarate => pyruvate + D-glyceraldehyde-3P
M00633 Other carbohydrate metabolism Pectin degradation
M00632 Other carbohydrate metabolism Galactose degradation, Leloir pathway, galactose => alpha-D-glucose-1P
M00631 Other carbohydrate metabolism D-Galactonate degradation (bacteria), D-galactonate => D-glyceraldehyde-3P + pyruvate
M00549 Other carbohydrate metabolism Ascorbate biosynthesis, animals, glucose-1P => ascorbate
M00114 Other carbohydrate metabolism Ascorbate biosynthesis, plants, fructose-6P => ascorbate
M00112 Other carbohydrate metabolism Glycogen biosynthesis, glucose-6P => glycogen
M00855 Other carbohydrate metabolism Glycogen biosynthesis, glucose-1P => glycogen/starch
M00855 Other carbohydrate metabolism Glycogen degradation, glycogen => glucose-6P
M00554 Other carbohydrate metabolism Nucleotide sugar biosynthesis, galactose => CMP-KDO
M00554 Other carbohydrate metabolism Nucleotide sugar biosynthesis, galactose => UDP-galactose
M00361 Other carbohydrate metabolism UDP-N-acetyl-D-galactosamine biosynthesis, eukaryotes, glucose => UDP-GlcNAc
M00362 Other carbohydrate metabolism UDP-N-acetyl-D-galactosamine biosynthesis, prokaryotes, glucose => UDP-GlcNAc
M00363 Other carbohydrate metabolism Bacterial cellulose biosynthesis, UDP-glucose => undecaprenyl phosphate alpha-L-Ara4N
M00081 Other carbohydrate metabolism Glycerolipid cycle
M00372 Other carbohydrate metabolism Ethylmalonyl pathway
M00373 Other carbohydrate metabolism Ethylene cycle
M00532 Other carbohydrate metabolism Photorespiration (C2 cycle)
M00013 Other carbohydrate metabolism Malonate semialdehyde pathway, propanoyl-CoA => acetyl-CoA
M00931 Other carbohydrate metabolism Trehalose degradation, trehalose => D-glucose + D-glucose-6P
M00004 Other carbohydrate metabolism Pentose biosynthesis pathway (nucleotide degradation), archaea, nucleosides/NMP => 3-PGA/glycerone phosphate
M00130 Other carbohydrate metabolism Inositol phosphate metabolism, Pri-PIP2 => 1tru1,4,5/P3 => 1ns1,3,4,5/P4
M00131 Other carbohydrate metabolism Inositol phosphate metabolism, 1ns1,3,4,5/P4 => 1ns3,4/P3 => myo-inositol
M00132 Other carbohydrate metabolism Inositol phosphate metabolism, 1ns1,3,4/P3 => phytic
M00165 Carbon fixation Reductive pentose phosphate cycle (Calvin cycle)
M00166 Carbon fixation CAM (Crassulacean acid metabolism), dark
M00167 Carbon fixation CAM (Crassulacean acid metabolism), light
M00168 Carbon fixation Calvin cycle, RuBP => 3-PGA, rbc enzyme type
M00170 Carbon fixation C4-dicarboxylic acid cycle, NAD = malic enzyme type
M00171 Carbon fixation C4-dicarboxylic acid cycle, phosphoenolpyruvate carboxykinase type
M00172 Carbon fixation C4-hydroxybutyrate cycle (Wood-Ljungdahl cycle)
M00375 Carbon fixation 3-Hydroxypropionate bi-cycle
M00376 Carbon fixation Hydroxypropionate-hydroxybutyrate cycle
M00377 Carbon fixation Dicarboxylate-hydroxybutyrate cycle
M00579 Carbon fixation Reductive acetyl-CoA pathway (Wood-Ljungdahl pathway)
M00579 Carbon fixation Phosphate acetyltransferase-acetate kinase pathway, acetyl-CoA => acetate
M00620 Carbon fixation Formaldehyde assimilation, RuMP cycle
M00567 Methane metabolism Methanogenesis, CO2 => methane
M00357 Methane metabolism Methanogenesis, acetate => methane
M00356 Methane metabolism Methanogenesis, methanol => methane
M00358 Methane metabolism Methanogenesis, methylamine/dimethylamine/trimethylamine => methane
M00358 Methane metabolism Coenzyme M biosynthesis
M00346 Methane metabolism 2-Oxocarboxylic acid chain extension, 2-oxoglutarate => 2-oxoadipate => 2-oxopimelate => 2-oxosuberate
M00346 Methane metabolism Methane oxidation, methanotroph, methane => formaldehyde
M00346 Methane metabolism Formaldehyde assimilation, serine pathway
M00346 Methane metabolism Formaldehyde assimilation, ribulose monophosphate pathway
M00344 Methane metabolism Formaldehyde assimilation, xylulose monophosphate pathway
M00346 Methane metabolism Methane oxidation, methanotroph, formaldehyde => CO2
M00422 Methane metabolism Methanofuran biosynthesis
M00422 Methane metabolism Acetyl-CoA pathway, CO2 => acetyl-CoA
M00531 Nitrogen metabolism Assimilatory nitrate reduction, nitrate => nitrite
M00531 Nitrogen metabolism Assimilatory nitrate reduction, nitrate => ammonia
M00530 Nitrogen metabolism Dissimilatory nitrate reduction, nitrate => ammonia
M00530 Nitrogen metabolism Dissimilatory nitrate reduction, nitrate => nitrite
M00804 Nitrogen metabolism Nitrification, ammonia => nitrite
M00804 Nitrogen metabolism Complete nitrification, comammox, ammonia => nitrite => nitrate
M00973 Nitrogen metabolism Anammox, nitrite + ammonia => nitrogen
M00176 Sulfur metabolism Assimilatory sulfate reduction, sulfate => H2S
M00596 Sulfur metabolism Dissimilatory sulfate reduction, sulfate => H2S
M00595 Sulfur metabolism Thiosulfate oxidation by SOX complex, thiosulfate => sulfate
M00161 Photosynthesis Photosystem II
M00163 Photosynthesis Photosystem I
M00597 Photosynthesis Anoxygenic photosystem II
M00598 Photosynthesis Anoxygenic photosystem I
M00144 ATP synthesis NADH quinone oxidoreductase, prokaryotes
M00145 ATP synthesis NADP(H)-quinone oxidoreductase, chloroplasts and cyanobacteria
M00146 ATP synthesis Ubiquinol cytochrome c oxidoreductase
M00147 ATP synthesis NADH dehydrogenase (ubiquinone) Fe-S protein/flavoprotein complex, mitochondria
M00148 ATP synthesis NADH dehydrogenase (ubiquinone) 1 alpha subcomplex
M00149 ATP synthesis NADH dehydrogenase (ubiquinone) 1 beta subcomplex
M00150 ATP synthesis Succinate dehydrogenase, prokaryotes
M00192 ATP synthesis Fumarate reductase, prokaryotes
M00151 ATP synthesis Succinate dehydrogenase (ubiquinone)
M00152 ATP synthesis Cytochrome bd complex
M00153 ATP synthesis Cytochrome bc1 complex respiratory unit
M00154 ATP synthesis Cytochrome bc1 complex
M00154 ATP synthesis Cytochrome c oxidase
M00155 ATP synthesis Cytochrome c oxidase, prokaryotes
M00155 ATP synthesis Cytochrome bd ubiquinol oxidase
M00417 ATP synthesis Cytochrome o ubiquinol oxidase
M00416 ATP synthesis Cytochrome aa3 ubiquinol oxidase
M00156 ATP synthesis Cytochrome c oxidase, cbb3-type
M00157 ATP synthesis F-type ATPase, prokaryotes and chloroplasts
M00158 ATP synthesis A-type ATPase, prokaryotes
M00159 ATP synthesis V/A-type ATPase, prokaryotes
M00160 ATP synthesis V-type ATPase, eukaryotes
M00082 Fatty acid metabolism Fatty acid biosynthesis, initiation
M00083 Fatty acid metabolism Fatty acid biosynthesis, elongation
M00086 Fatty acid metabolism Beta-oxidation, acyl-CoA synthetase, animals
M00087 Fatty acid metabolism Fatty acid biosynthesis in mitochondria, animals
M00085 Fatty acid metabolism Fatty acid biosynthesis in mitochondria, fungi
M00036 Fatty acid metabolism Fatty acid elongation in mitochondria
M00086 Fatty acid metabolism Beta-oxidation, acyl-CoA synthetase, peroxisome
M00086 Fatty acid metabolism Beta-oxidation, acyl-CoA synthetase
M00087 Fatty acid metabolism Beta-Oxidation
M00373 Fatty acid metabolism Fatty acid biosynthesis, peroxisome, VLCFA
M00101 Steroid biosynthesis Cholesterol biosynthesis, FPP => cholesterol
M00102 Steroid biosynthesis Ergocalciferol biosynthesis, FPP => ergosterol/ergocalciferol
M00103 Steroid biosynthesis Cholesterol biosynthesis, squalene 2,3-epoxide => campesterol/sitosterol
M00104 Steroid biosynthesis Cholecalciferol biosynthesis
M00105 Steroid biosynthesis Bile acid biosynthesis, cholesterol => cholate/chenodeoxycholate
M00106 Steroid biosynthesis Bile acid biosynthesis, 7-dehydrocholesterol => 7-dehydrocholate/chenodeoxycholate
M00860 Steroid biosynthesis beta-Oxidation, peroxisome, hydroxyoxo/hydroxy/oxo-cholestanoyl-CoA => chenodeoxycholoyl-CoA
M00107 Steroid biosynthesis Steroid hormone biosynthesis, cholesterol => pregnenolone => progesterone
M00108 Steroid biosynthesis C21-Steroid hormone biosynthesis, progesterone => corticosterone/aldosterone
M00109 Steroid biosynthesis C21-Steroid hormone biosynthesis, progesterone => 11-deoxycorticosterone => cortisol
M00110 Steroid biosynthesis C19-Steroid hormone biosynthesis, pregnenolone => testosterone => dihydrotestosterone
M00111 Steroid biosynthesis C19-Steroid hormone biosynthesis (androgen backdoor pathway), pregnenolone => androsterone => dihydrotestosterone
M00087 Fatty acid metabolism Fatty acid biosynthesis in mitochondria, acyl-CoA => acetoacetate/3-hydroxybutyrate/acetone
M00089 Lipid metabolism Triacylglycerol biosynthesis
M00098 Lipid metabolism Acylglycerol degradation
M00094 Lipid metabolism Phosphatidylcholine (PC) biosynthesis, choline => PC
M00095 Lipid metabolism Phosphatidylcholine (PC) biosynthesis, PE => PC
M00096 Lipid metabolism Phosphatidylethanolamine (PE) biosynthesis, ethanolamine => PE
M00097 Lipid metabolism Phosphatidylethanolamine (PE) biosynthesis, PA => PS => PE
M00065 Lipid metabolism Ceramide biosynthesis
M00066 Lipid metabolism Lactosylceramide biosynthesis
M00067 Lipid metabolism Sulfoglycolipids biosynthesis, ceramide1-alkyl-2-acylglycerol => sulfatide/seminolipid
M00068 Lipid metabolism Sphingosine biosynthesis
M00069 Lipid metabolism Sphingosine degradation
M00090 Lipid metabolism Jasmonic acid biosynthesis
M00048 Purine metabolism De novo purine biosynthesis, PRPP + glutamine => IMP
M00049 Purine metabolism Adenosine ribonucleotide biosynthesis, IMP => ATP
M00050 Purine metabolism Guanine ribonucleotide biosynthesis, IMP => GDP/GTP
M00053 Purine metabolism Deoxyribonucleotide biosynthesis, ADP/GDP/CDP/UDP => dATP/dGTP/dCTP/dUTP
M00051 Purine metabolism Adenosine ribonucleotide biosynthesis, ATP => AMP
M00054 Purine metabolism Guanine ribonucleotide degradation, GMP => Uratе
M00046 Purine metabolism Purine degradation, xanthine => urea
M00052 Pyrimidine metabolism De novo pyrimidine biosynthesis, glutamine (+ PRPP) => UMP
M00052 Pyrimidine metabolism Pyrimidine ribonucleotide biosynthesis, UMP => UDP/UTP/CDP/CTP
M00052 Pyrimidine metabolism Deoxyribonucleotide biosynthesis, CDP => dCTP
M00939 Pyrimidine metabolism Pyrimidine degradation, uracil => beta-alanine, thymine => 3-aminoisobutanoate
M00939 Pyrimidine metabolism Pyrimidine degradation, uracil => 3-hydroxypropionate
M00018 Serine and threonine metabolism Serine biosynthesis, glycerate-3P => serine
M00033 Serine and threonine metabolism Threonine biosynthesis, aspartate => homoserine => threonine
M00018 Serine and threonine metabolism Serine biosynthesis, PHB
M00555 Serine and threonine metabolism Betaine biosynthesis, choline => betaine
M00374 Serine and threonine metabolism Betaine metabolism, animals, betaine => glycine
M00555 Serine and threonine metabolism Betaine biosynthesis, choline => glycine betaine
M00018 Serine and threonine metabolism Ectoine biosynthesis, aspartate => ectoine
M00019 Serine and threonine metabolism Ectoine degradation, ectoine => aspartate
M00017 Cysteine and methionine metabolism Methionine biosynthesis, homoserine => cysteine
M00609 Cysteine and methionine metabolism Cysteine biosynthesis, homocysteine + serine => cysteine
M00609 Cysteine and methionine metabolism Cysteine biosynthesis, methionine => cysteine
M00034 Cysteine and methionine metabolism Methionine salvage pathway, methylthioadenosine => homoserine => methionine
M00035 Cysteine and methionine metabolism Methionine salvage pathway
M00036 Cysteine and methionine metabolism Methionine degradation
M00048 Cysteine and methionine metabolism Ethylene biosynthesis, methionine => ethylene
M00019 Branched-chain amino acid metabolism Valine/isoleucine biosynthesis, pyruvate => valine / 2-oxobutanoate => isoleucine
M00570 Branched-chain amino acid metabolism Isoleucine biosynthesis, threonine => 2-oxobutanoate
M00570 Branched-chain amino acid metabolism Isoleucine biosynthesis, threonine => 2-oxobutanoate => 2-oxoisocaproate
M00432 Branched-chain amino acid metabolism Leucine biosynthesis, 2-oxoisobutanoate => 2-oxoisocaproate
M00432 Branched-chain amino acid metabolism Leucine degradation, leucine => acetoacetate + acetyl-CoA
M00016 Lysine metabolism Lysine biosynthesis, succinyl-DAP pathway, aspartate => lysine
M00030 Lysine metabolism Lysine biosynthesis, DAP dehydrogenase pathway, aspartate => lysine
M00526 Lysine metabolism Lysine biosynthesis, DAP aminotransferase pathway, aspartate => lysine
M00527 Lysine metabolism Lysine biosynthesis, DAP aminotransferase pathway, aspartate => lysine
M00031 Lysine metabolism Lysine biosynthesis, 2-oxoglutarate => 2-oxoadipate
M00031 Lysine metabolism Lysine biosynthesis, 2-oxoglutarate => 2-oxoadipate => lysine
M00031 Lysine metabolism Lysine biosynthesis, mediated by LysW, 2-aminoadipate => lysine
M00997 Lysine metabolism Lysine degradation, bacteria, L-lysine => 2-aminoadipate/2-oxoadipate => glutaryl-CoA
M00997 Lysine metabolism Lysine degradation, bacteria, L-lysine => glutarate => succinate/acetyl-CoA
M00997 Lysine metabolism Lysine degradation, bacteria, L-lysine => glutarate => succinate
M00028 Arginine and proline metabolism Ornithine biosynthesis, glutamate => ornithine
M00028 Arginine and proline metabolism Ornithine biosynthesis, glutamate => ornithine
M00045 Arginine and proline metabolism Arginine biosynthesis, ornithine => arginine
M00845 Arginine and proline metabolism Arginine biosynthesis, glutamate => acetylcitrulline => arginine
M00844 Arginine and proline metabolism Arginine biosynthesis
M00029 Arginine and proline metabolism Proline biosynthesis, glutamate => proline
M00029 Arginine and proline metabolism Proline biosynthesis, ornithine => proline
M00029 Arginine and proline metabolism Proline degradation, proline => glutamate
M00135 Arginine and proline metabolism Arginine degradation
M00879 Arginine and proline metabolism Creatine pathway
M00879 Arginine and proline metabolism Arginine succinyltransferase pathway, arginine => glutamate
M00133 Polyamine biosynthesis Polyamine biosynthesis, arginine => agmatine => putrescine => spermidine
M00133 Polyamine biosynthesis Polyamine biosynthesis, arginine => ornithine => putrescine
M00135 Polyamine biosynthesis GABA biosynthesis, eukaryotes, putrescine => GABA
M00135 Polyamine biosynthesis GABA biosynthesis, prokaryotes, putrescine => GABA
M00026 Histidine metabolism Histidine biosynthesis, PRPP => histidine
M00026 Histidine metabolism Histidine degradation, histidine => N-formiminoglutamate => glutamate
M00022 Shikimate pathway Shikimate pathway, phosphoenolpyruvate + erythrose-4P => chorismate
M00040 Aromatic amino acid metabolism Chorismate biosynthesis, shikimate => chorismate
M00910 Aromatic amino acid metabolism Phenylalanine biosynthesis, chorismate => phenylpyruvate => phenylalanine
M00910 Aromatic amino acid metabolism Phenylalanine biosynthesis, chorismate => arogenate => phenylalanine
M00911 Aromatic amino acid metabolism Tyrosine biosynthesis, chorismate => 4-hydroxyphenylpyruvate
M00911 Aromatic amino acid metabolism Tyrosine biosynthesis, chorismate => arogenate => tyrosine
M00042 Aromatic amino acid metabolism Catecholamine biosynthesis, tyrosine => dopamine => noradrenaline => adrenaline
M00531 Aromatic amino acid metabolism Tyrosine degradation, tyrosine => 4-hydroxyphenylpyruvate
M00531 Aromatic amino acid metabolism Tyrosine degradation, tyrosine => homogentisate
M00043 Aromatic amino acid metabolism Homoprotocatechuate degradation, homoprotocatechuate => 2-oxohept-3-enedioate
M00044 Aromatic amino acid metabolism Phenylalanine degradation, phenylalanine => phenylacetate
M00044 Aromatic amino acid metabolism Melatonin biosynthesis, plants, tryptophan => serotonin => melatonin
M00038 Aromatic amino acid metabolism Tryptophan metabolism, tryptophan => kynurenine => 2-aminomuconate
M00039 Other amino acid metabolism GABA (gamma-Aminobutyrate) shunt, prokaryotes
M00118 Other amino acid metabolism Cyanogenic glycoside biosynthesis, tyrosine => dhurrin
M00118 Other amino acid metabolism Cyanogenic glycoside biosynthesis, valine => vignatin
M00119 Other amino acid metabolism D-Arginine (ornithine), D-arginine => L-arginine
M00119 Other amino acid metabolism Hydroxyproline degradation, trans-4-hydroxy-L-proline => 2-oxoglutarate
M00119 Other amino acid metabolism Lysine degradation, L-lysine => 5-aminopentanoate
M00073 Glycan biosynthesis N-glycan precursor biosynthesis
M00073 Glycan biosynthesis N-glycosylation by oligosaccharyltransferase
M00073 Glycan biosynthesis N-glycan trimming
M00075 Glycan biosynthesis N-glycan biosynthesis, high-mannose type
M00076 Glycan biosynthesis N-glycan biosynthesis, complex type
M00077 Glycan biosynthesis O-glycan biosynthesis, core 1 type
M00078 Glycan biosynthesis O-glycan biosynthesis, mannosyl type core M3
M00079 Glycan biosynthesis GPI-anchor biosynthesis, core oligosaccharide
M00060 Glycan biosynthesis Glycosphingolipid biosynthesis, globo-series, LacCer => Gb4Cer
M00060 Glycan biosynthesis Glycosphingolipid biosynthesis, globo-series, LacCer => Gb4Cer
M00069 Glycan biosynthesis Glycosphingolipid biosynthesis, ganglio series, LacCer => GT3
M00037 Glycosaminoglycan metabolism Glycosaminoglycan biosynthesis, linkage tetrasaccharide
M00037 Glycosaminoglycan metabolism Glycosaminoglycan biosynthesis, heparan sulfate/heparin
M00076 Glycosaminoglycan metabolism Glycosaminoglycan biosynthesis, heparan sulfate backbone
M00074 Glycosaminoglycan metabolism Dermatan sulfate degradation
M00037 Glycosaminoglycan metabolism Heparan sulfate/heparin biosynthesis
M00039 Glycosaminoglycan metabolism Heparan sulfate degradation
M00079 Glycosaminoglycan metabolism Keratan sulfate degradation
M00064 Lipopolysaccharide metabolism KDO2-lipid A biosynthesis, Raetz pathway, Lpx/L-LpxM type
M00064 Lipopolysaccharide metabolism KDO2-lipid A biosynthesis, Raetz pathway, non-Lpx/L-LpxM type
M00063 Lipopolysaccharide metabolism CMP-KDO biosynthesis pathway
M00064 Lipopolysaccharide metabolism ADP-L-glycero-D-manno-heptose biosynthesis
M00064 Lipopolysaccharide metabolism ADP-L-glycero-beta-D-manno-heptose
M00064 Lipopolysaccharide metabolism UDP-L-rhamnose biosynthesis
M00127 Cofactor and vitamin metabolism Thiamine biosynthesis, prokaryotes, AIR + [DXP(syntase)] => TMP/PPP
M00127 Cofactor and vitamin metabolism Thiamine biosynthesis, prokaryotes, AIR [+ DXP(syntase)] => TMP/PPP
M00127 Cofactor and vitamin metabolism Thiamine biosynthesis, archaea, AIR (+ NAD+) => TMP/PPP
M00127 Cofactor and vitamin metabolism Thiamine biosynthesis, archaea, AIR [+ NAD+] => TMP/PPP
M00128 Cofactor and vitamin metabolism Thiamine biosynthesis, pyridoxal-5P => TMP/thiamine/PPP
M00124 Cofactor and vitamin metabolism Thiamine salvage pathway, HMP/HET => TMP
M00124 Cofactor and vitamin metabolism Thiamine salvage pathway, AMP/HMP/HET => riboflavin/FMN/FAD
M00124 Cofactor and vitamin metabolism Ribofiavin biosynthesis, fungi, GTP => riboflavin/FMN/FAD
M00124 Cofactor and vitamin metabolism Pyridoxal-P biosynthesis, erythrose-4P => pyridoxal-5
M00124 Cofactor and vitamin metabolism Pyridoxal-P biosynthesis, DXP/Gly/Glu => PNP/PMP + glutamine => pyridoxal-P
M00125 Cofactor and vitamin metabolism NAD biosynthesis, aspartate => quinolinate => NAD
M00962 Cofactor and vitamin metabolism NAD biosynthesis, tryptophan => quinolinate => NAD
M00962 Cofactor and vitamin metabolism Nicotinate degradation, nicotinate => 6-hydroxynicotinate => 6-dihydroxynicotinate/succinate semialdehyde
M00962 Cofactor and vitamin metabolism Nicotinate degradation, pyridine ring cleavage, nicotinate => succinate/malonate/pyruvate
M00960 Cofactor and vitamin metabolism Nicotinate degradation, nicotinate => fumarate
M00120 Cofactor and vitamin metabolism Pantothenate biosynthesis, valine/3-methyl-2-oxobutanoate => pantothenate
M00119 Cofactor and vitamin metabolism Pantothenate biosynthesis, beta-alanine => pantothenate
M00119 Cofactor and vitamin metabolism Coenzyme A biosynthesis, pantothenate => CoA
M00120 Cofactor and vitamin metabolism Coenzyme A biosynthesis, eukaryotes, pantothenate => 4-phosphopantoate => CoA
M00120 Cofactor and vitamin metabolism Biotin biosynthesis, pimeloyl-ACP/CoA => biotin
M00123 Cofactor and vitamin metabolism Biotin biosynthesis, BioF pathway, pimeloyl-ACP/CoA => biotin
M00123 Cofactor and vitamin metabolism Biotin biosynthesis, BioW pathway, pimeloyl-ACP/CoA => biotin
M00123 Cofactor and vitamin metabolism Biotin biosynthesis, BioC-BioH pathway, malonyl-ACP => pimeloyl-ACP
M00123 Cofactor and vitamin metabolism Biotin biosynthesis, pimeloyl-ACP/CoA => biotin
M00123 Cofactor and vitamin metabolism Biotin biosynthesis, BioC-BioH pathway, malonyl-ACP => pimeloyl-ACP => biotin
M00123 Cofactor and vitamin metabolism Biotin biosynthesis, BioW pathway, pimeloyl => pimeloyl-CoA => biotin
M00832 Cofactor and vitamin metabolism Lipoic acid biosynthesis, eukaryotes, octanoyl-ACP => dihydrolipoyl-E2
M00832 Cofactor and vitamin metabolism Lipoic acid biosynthesis, eukaryotes, octanoyl-ACP => dihydrolipoyl-E2 => dihydrolipoyl-E2
M00832 Cofactor and vitamin metabolism Lipoic acid biosynthesis, animals and bacteria, octanoyl-ACP => dihydrolipoyl-H => dihydrolipoyl-E2
M00832 Cofactor and vitamin metabolism Lipoic acid biosynthesis, octanoyl-ACP => dihydrolipoyl-H => dihydrolipoyl-E2
M00840 Cofactor and vitamin metabolism Tetrahydrofolate biosynthesis, GTP => THF
M00840 Cofactor and vitamin metabolism Tetrahydrofolate biosynthesis, mediated by rfaA and folP, GTP => THF
M00840 Cofactor and vitamin metabolism Tetrahydrofolate biosynthesis, GTP => 7,8-dihydrofolate => THF
M00841 Cofactor and vitamin metabolism Tetrahydrofolate biosynthesis, GTP => THF
M00841 Cofactor and vitamin metabolism Tetrahydrofolate biosynthesis, GTP => 1-threo-BH4
M00126 Cofactor and vitamin metabolism Molybdenum cofactor biosynthesis, GTP => molybdenum cofactor
M00931 Cofactor and vitamin metabolism C1-unit interconversion, prokaryotes
M00931 Cofactor and vitamin metabolism C1-unit interconversion, eukaryotes
M00896 Cofactor and vitamin metabolism Selenide biosynthesis, glutamyl-tRNA => selenide
M00868 Cofactor and vitamin metabolism Heme biosynthesis, archaea and fungi, glycine => heme
M00868 Cofactor and vitamin metabolism Heme biosynthesis, archaea and fungi, glutamyl-tRNA => heme
M00121 Cofactor and vitamin metabolism Heme biosynthesis, bacteria, glutamyl-tRNA => coproporphyrin III => heme
M00868 Cofactor and vitamin metabolism Heme biosynthesis, archaea, bacteria, or fungi, siroheme => heme
M00122 Cofactor and vitamin metabolism Cobalamin biosynthesis, cobinamide => cobalamin, anaerobic, precorrin-2 => cobyrinate a,c-diamide
M00122 Cofactor and vitamin metabolism Cobalamin biosynthesis, aerobic, uroporphyrinogen III => precorrin-2 => cobyrinate a,c-diamide
M00122 Cofactor and vitamin metabolism Cobalamin biosynthesis, cobyrinate a,c-diamide => cobalamin
M00122 Cofactor and vitamin metabolism Cobalamin biosynthesis, cobinamide => cobalamin, anaerobic
M00122 Cofactor and vitamin metabolism Ubiquinone biosynthesis, prokaryotes, chorismate => polyprenyl-PP => ubiquinol
M00931 Cofactor and vitamin metabolism Ubiquinone biosynthesis, eukaryotes, 4-hydroxybenzoate + polyprenyl-PP => ubiquinol
M00931 Cofactor and vitamin metabolism Ubiquinone biosynthesis, eukaryotes, chorismate => polyprenyl-PP => ubiquinol
M00931 Cofactor and vitamin metabolism Menaquinone biosynthesis, futalosine pathway
M00931 Cofactor and vitamin metabolism Menaquinone biosynthesis, modified futalosine pathway
M00931 Cofactor and vitamin metabolism Menaquinone biosynthesis, chorismate => 1,4-DHNA => menaquinol
M00931 Cofactor and vitamin metabolism Tocopherol/tocotrienol biosynthesis, homogentisate + phytyldiphosphate/geranylgeranyl-PP => tocopherol/tocotrienol
M00931 Cofactor and vitamin metabolism Plastoquinone biosynthesis, homogentisate + solanesyl-PP => plastoquinol
M00366 Terpenoid backbone biosynthesis C5 isoprenoid biosynthesis, mevalonate pathway
M00366 Terpenoid backbone biosynthesis C5 isoprenoid biosynthesis, mevalonate pathway, archaea
M00364 Terpenoid backbone biosynthesis C5 isoprenoid biosynthesis, bacteria
M00364 Terpenoid backbone biosynthesis C10-C15 isoprenoid biosynthesis, bacteria
M00364 Terpenoid backbone biosynthesis C10-C15 isoprenoid biosynthesis, archaea
M00365 Terpenoid backbone biosynthesis C10-C15 isoprenoid biosynthesis, plants
M00365 Terpenoid backbone biosynthesis C10-C15 isoprenoid biosynthesis, non-plant eukaryotes
M00097 Plant terpenoid biosynthesis beta-Carotene biosynthesis, GGAP => beta-carotene
M00097 Plant terpenoid biosynthesis Carotenoid biosynthesis, beta-carotene => abscisic acid
M00927 Plant terpenoid biosynthesis Carotenoid biosynthesis, carotenoid => cytokininins
M00927 Plant terpenoid biosynthesis Gibberellin A12 biosynthesis, GAPP => GA12
M00927 Plant terpenoid biosynthesis Gibberellin A4/A1 biosynthesis, GA12/GA53 => GA4/GA1
M00927 Plant terpenoid biosynthesis Gibberellin A1 biosynthesis, GA53 => GA1
M00772 Macrolide biosynthesis Erythromycin biosynthesis, propanoyl-CoA + malonyl-CoA => 6-deoxyerythronolide B => erythromycin A/B
M00772 Macrolide biosynthesis Mycinamicin biosynthesis, malonyl-CoA + methylmalonyl-CoA => 6-deoxyhexonic acid
M00774 Macrolide biosynthesis Pikromycin/methymycin biosynthesis, methylmalonyl-CoA + malonyl-CoA => 12-deoxymethynolide => pikromycin/methymycin
M00775 Macrolide biosynthesis Avermectin biosynthesis, 2-methylbutanoyl-CoA/isobutyryl-CoA => 6,8a-Seco-6,8a-deoxy-5-oxoavermectin 1a/1b aglycone => avermectin A1a/B1a/A1b/B1b
M00826 Enediyne biosynthesis 9-membered enediyne core biosynthesis, malonyl-CoA => 3-hydroxyhexadeca-4,6,8,10,12,14-hexaenoyl-ACP => 9-membered enediyne core
M00828 Enediyne biosynthesis 10-membered enediyne core biosynthesis, malonyl-CoA => 3-hydroxydeca-4,6,8,10,12,14-hexaenoyl-ACP => 10-membered enediyne core
M00829 Enediyne biosynthesis C-1027 beta-amino acid moiety biosynthesis, tyrosine => 3-chloro-4,5-dihydroxy-beta-phenylalanyl-PCP
C-1027 beta-amino acid moiety biosynthesis, tyrosine => 3-(4-hydroxyphenyl)-2-oxopropanoyl-PCP
M00830 Enediyne biosynthesis Maduropeptin beta-hydroxy acid moiety biosynthesis, tyrosine => 3-(4-hydroxyphenyl)-2-oxopropanoyl-PCP
M00831 Enediyne biosynthesis Kedarcidin 2-hydroxynaphthoate moiety biosynthesis, malonyl-CoA => 3,8,8-trihydroxy-2-naphthoate => 2-hydroxy-7-methoxy-5-methyl-1-naphthoyl-CoA
M00831 Enediyne biosynthesis Neocarzinostatin naphthoate moiety biosynthesis, malonyl-CoA => 3,8,8-trihydroxy-2-naphthoate => 2-hydroxy-7,8-dimethoxy-6-bromo-5-methyl-1-naphthoyl-CoA
M00833 Enediyne biosynthesis Calicheamicin methylcarbamodithioic acid moiety biosynthesis, cysteine => 2-methylcysteine => 2-methylcysteinyl-ACP
M00833 Enediyne biosynthesis Calicheamicin prolinolate moiety biosynthesis, malonyl-CoA => prolinolate-ACP => 5-oxo-2,3-dimethoxycyclohexane-ACP
M00778 Type II polyketide biosynthesis Type II polyketide backbone biosynthesis, acyl-CoA + malonyl-CoA => polyketide
M00779 Type II polyketide biosynthesis Dihydrokalafungin biosynthesis, octaketide => dihydrokalafungin
M00780 Type II polyketide biosynthesis Oxytetracycline biosynthesis, malonyl-CoA => 6-methylsalicylate/oxytetracycline
M00781 Type II polyketide biosynthesis Oligosaccharide biosynthesis, prostenamine => chromomycinose
M00782 Type II polyketide biosynthesis Nogalamycin/elisabethin biosynthesis, deoxynogalose/elisabethosylalannose => nogalavinone/elisabethin
M00783 Type II polyketide biosynthesis Daunorubicin/doxorubicin biosynthesis, daunosamine => daunorubicinone
M00784 Type II polyketide biosynthesis Tetracycline/CB-dimethylbetaracinomycin II, tetracycinonic acid/CB-dimethylbetaracinomycin C => tetracycline/CB-dimethylbetaracinomycin C
M00784 Type II polyketide biosynthesis Elloramycin biosynthesis, B-dimethylbetaracinomycin C => elloramycin A
M00785 Polyketide sugar unit biosynthesis dTDP-L-rhamnose biosynthesis
M00786 Polyketide sugar unit biosynthesis dTDP-beta-L-rhamnose biosynthesis
M00787 Polyketide sugar unit biosynthesis dTDP-beta-L-novose biosynthesis
M00788 Polyketide sugar unit biosynthesis dTDP-D-olivose biosynthesis
M00789 Polyketide sugar unit biosynthesis dTDP-D-desosamine biosynthesis
M00790 Polyketide sugar unit biosynthesis dTDP-L-mycarose biosynthesis
M00791 Polyketide sugar unit biosynthesis dTDP-L-oleandrose biosynthesis
M00792 Polyketide sugar unit biosynthesis dTDP-L-megosamine biosynthesis
M00793 Polyketide sugar unit biosynthesis dTDP-D-digitoxose biosynthesis
M00794 Polyketide sugar unit biosynthesis dTDP-D-forosamine biosynthesis
M00795 Polyketide sugar unit biosynthesis dTDP-D-angolosamine biosynthesis
M00127 Biosynthesis of phytochemical compounds Phenylalanine/tyrosine/tryptophan biosynthesis, shikimate => monolignol
M00137 Biosynthesis of phytochemical compounds Flavanone biosynthesis, phenylalanine => naringenin
M00940 Biosynthesis of phytochemical compounds Flavanone biosynthesis, p-coumaroyl-CoA => liquiritigenin
M00941 Biosynthesis of phytochemical compounds Flavonoid biosynthesis, naringenin => apigenin
M00942 Biosynthesis of phytochemical compounds Isoflavone biosynthesis, liquiritigenin/naringenin => daidzein/genistein
M00943 Biosynthesis of phytochemical compounds Pterocarpan biosynthesis, daidzein => medicarpin
M00944 Biosynthesis of phytochemical compounds Flavan biosynthesis, naringenin => leucopelargonidin
M00945 Biosynthesis of phytochemical compounds Flavonoid biosynthesis, dihydroflavonol => DHCA/DHMA
M00946 Biosynthesis of phytochemical compounds Betacyanin biosynthesis, betanidin => betanin
M00947 Biosynthesis of phytochemical compounds Chanoclavine biosynthesis, tryptophan => chanoclavine-I aldehyde
M00948 Biosynthesis of phytochemical compounds Fumigaclavine biosynthesis, chanoclavine-I aldehyde => fumigaclavine C
M00949 Biosynthesis of phytochemical compounds Ergotamine biosynthesis, ergosine => ergotamine
M00950 Biosynthesis of phytochemical compoun